

Remarks/Arguments:

Amendments

The specification has been amended to correct obvious informalities. Claim 1 has been amended to incorporate the limitations of claim 4 and claim 6. The claims have also been amended to correct grammatical errors and to introduce conventional claim language. The phrase "and thereby producing a negative working image" has been deleted from claims 1, 11, and 15 because it is a redundant limitation. Support for the amendment to claim 13 is found on page 14, lines 32-33. Support for newly presented claims 19-23 is found on page 9, lines 18-30. It is submitted that no new matter is introduced by these amendments and new claims.

Declaration

A new Declaration was required. A newly executed Declaration is enclosed.

Abstract

The Abstract was objected to. A revised Abstract is attached.

Supplemental Information Disclosure Statement

A Supplemental Information Disclosure Statement is being submitted. The Examiner's attention is called to the fact that Shimazu, U.S. Patent 6,294,311, filed December 22, 1999, issued September 25, 2001, is the U.S. equivalent of Shimazu, WO 01/46318, cited below.

Rejection under 35 USC 102

Claims 1-8 and 11 were rejected as anticipated by Bennett, WO 96/20429 ("Bennett"), with Walls, EP 626273 ("Walls") cited to show inherent properties. This rejection is respectfully traversed.

Bennett discloses a method for forming a lithographic plate that comprises coating a base with a positive working composition, overall exposing the assembly to ultraviolet radiation, imagewise exposing with an infrared laser, and developing to remove the areas not exposed by the laser. Bennett, Claim 1. Thermal conduction may be reduced by the use of layers taught by Walls. Bennett, page 6, lines 4-5.

Walls discloses a hydrophilic barrier layer comprising a copolymer of 40 to 90 mole percent vinylphosphonic acid and 10 to 60 mole percent acrylamide. Walls, Abstract.

The layer disclosed by Walls is not the layer recited by applicants' claims. Aluminum substrates used in lithographic printing are conventionally treated to increase the hydrophilicity of the surface. *See, for example*, Walls, page 1, line 42, to page 2, line 30 and page 4, lines 1-11, and lines 15-19; and specification, page 9, lines 12-13, and page 19, lines 33-34. The barrier layer of Walls is an example of such a layer. Walls, page 3, lines 48-52.

The layer of Walls is not removed by the developer. Removal of this layer by the developer would defeat its purpose. Note that the layer improves the hydrophilicity of the background area of the printing plate, reduces the propensity toward scumming, and allows faster roll-up and generation of a first good print. Walls, page 4, lines 6-11. The layer must present in the imaged and developed printing plate to perform these functions. Printing plates in which the aluminum substrate was coated with the barrier layer were evaluated, indicating that the layer is present in the imaged and developed printing plate. *See*, Walls, Examples 1-2.

The first layer recited in applicants' claims comprises at least one polymer that is "soluble or dispersible in an aqueous alkaline solution." It is removed by the developer. Specification, page 16, lines 25-27. As discussed above, the layer of Walls is not removed by the developer and consequently is not "soluble or dispersible in an aqueous alkaline solution."

It is axiomatic that for a prior art reference to anticipate under § 102 it has to meet every element of the claimed invention. . . ." *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1980) (emphasis added). Bennett does not disclose a two layer photosensitive assembly in which the first layer comprises at least one polymer that is soluble or dispersible in an aqueous alkaline solution. The rejection of claims as anticipated by Bennett should be withdrawn.

First Rejection under 35 USC 103

Claims 1-5, and 10-18 were rejected as unpatentable over Takahashi, U.S. Patent 4,544,627 ("Takahashi"), in view of Shimazu, WO 01/46318 ("Shimazu").

Takahashi discloses a negative image forming process that comprises (1) uniformly

exposing a photosensitive material; (2) subsequently imagewise exposing that uniformly exposed photosensitive material with a laser beam; and (3) then developing that imagewise exposed photosensitive material with an alkaline developing solution. Takahashi, Abstract. The photosensitive material contains an o-quinonediazide compound and a second compound that converts an intermediate indene carboxylic acid to the corresponding indene compound. Takahashi, column 3, lines 29-32. Takahashi's process uses a single layer that is placed directly on the substrate. Takahashi, column 3, lines 17-19.

Shimazu discloses imageable elements that contain a substrate, an underlayer and a top layer. Shimazu, Abstract. Copolymers that comprise about 35 to about 60 mol% of N-phenylmaleimide, about 15 to about 40 mol% of methacrylamide, and about 10 to about 30 mol% of methacrylic acid are disclosed for use in the underlayer. Shimizu, claim 27.

The Office admits that Takahashi performs the imagewise exposure using a visible laser and does not disclose imagewise exposing the photosensitive assembly with infrared radiation and that visible light is preferred because IR lasers are difficult to handle. Office action, page 5, lines 3-4. The Office also admits that Takahashi does not disclose a first layer between the hydrophilic support and the photosensitive layer that is soluble or dispersible in an aqueous alkaline solution and has at least one functional group selected from the group consisting of carboxylic acid, N-substituted cyclic imide, amide, and mixtures thereof and or a terpolymer of methacrylamide, methacrylic acid, and N-phenylmaleimide.

In addition, the layer of Takahashi comprises "a second compound . . . which is able to convert the o-quinonediazide compound to the corresponding indenecarboxylic acid compound, and . . . to the corresponding indene compound." Takahashi, claim 1. This feature is not recited by applicants' claims.

Nothing in Takahashi or Shimazu discloses or suggests that the second layer recited in applicants' claims. Takahashi uses visible radiation. Nothing in Takahashi or Shimazu discloses or suggests that longer wavelength, lower photon energy visible radiation would also be effective. In addition, nothing in Takahashi or Shimazu discloses or suggests that the second compound disclosed by Takahashi is not required when infrared radiation is used in place of visible radiation.

The Office has not made the *prima facie* case. For the reasons discussed above,

combination of Takahashi and Shimazu in the manner indicated by the Office does not produce applicants' invention. Therefore, the rejection of claims as unpatentable over Takahashi and Shimazu should be withdrawn.

In addition, contrary to the Office assertion that the person of ordinary skill in the art would be motivated by Takahashi to use an infrared laser, Takahashi teaches away from applicants' invention. Takahashi teaches that "As the laser used for image recording in the present invention, a laser emitting visible radiation is preferred, because laser of invisible infrared rays or ultraviolet rays are a problem in handling." Takahashi, column 22, lines 33-36 (emphasis added). This would motive a person of ordinary skill in the art to avoid infrared and ultraviolet lasers, because the laser beams can not be seen and thus constitute a safety hazard, and instead use a visible laser.

A reference that teaches away from an invention cannot make it obvious. For this additional reason, the rejection of claims as unpatentable over Takahashi and Shimazu should be withdrawn.

Second Rejection under 35 USC 103

Claims 1-5, and 10-18 were rejected as unpatentable over Takahashi, U.S. Patent 4,544,627 ("Takahashi"), in view of Teng, U.S. Patent 6,387,595 and Shimazu, WO 01/46318.

Teng discloses a on-press developable lithographic printing plate comprising a substrate, a photosensitive layer, and an ultrathin top layer. Teng, Abstract.

Teng has been cited for its teaching that "lithographic printing plates are conventionally exposed to either visible light or infrared lasers because of their easy availability." Office action, page 5, lines 8-10. The implication is that it would be obvious to one skilled in the art to image any printing plate with either visible or infrared radiation.

Teng has been quoted out of context. The passage relied on reads as follows:

It is noted that lithographic printing plates suitable for exposure with a conventional actinic light source through a photo mask can also be directly imagewise exposed with a laser having similar actinic wavelength. Because of the easy availability of certain visible and infrared lasers, such as violet laser

(430 nm), argon laser (488 nm), frequency-doubled Nd/YAG laser (532 nm), diode laser (830 nm) and Nd/YAG laser (1064 nm), plates for laser imaging are often sensitized to the wavelength of one of these lasers.

Teng, column 7, lines 55-63 (emphasis added).

Teng also teaches that printing plates are sensitized to the wavelength of one of these lasers. That is, Teng teaches that printing plates must be designed to be imaged by a particular wavelength of laser. Therefore, Teng does not suggest that any printing plate designed to be imaged with visible radiation can also be imaged with infrared radiation.

As discussed above, combination of Takahashi and Shimazu in the manner indicated by the Office does not produce applicants' invention. This deficiency is not overcome by Teng. Therefore, the rejection of claims as unpatentable over Takahashi, Shimazu, and Teng should be withdrawn.

Third Rejection under 35 USC 103

Claims 9 and 10 were as rejected as unpatentable over Bennett with Walls cited to show inherent properties. As discussed above, Bennett does not disclose a two layer photosensitive assembly in which the first layer comprises at least one polymer that is soluble or dispersible in an aqueous alkaline solution. Therefore, the rejection of claims 9 and 10 as unpatentable over Bennett should be withdrawn.

Fourth Rejection under 35 USC 103

Claim 9 was rejected as unpatentable over Takahashi in view of Teng or, in the alternative, over Takahashi in view of Teng and Shimazu.

Neither Takahashi nor Teng discloses a two layer element in which the underlayer comprises a polymer that is soluble or dispersible in an aqueous alkaline solution. Therefore, combination of Takahashi and Teng in the manner indicated by the Office does not produce applicants' invention. The rejection of claim 9 as unpatentable over Takahashi and Teng should be withdrawn.

As discussed above, the combination of Takahashi, Teng, and Shimazu does not produce

Appln. No.: 10/016,173
Amendment Dated: September 29, 2003
Reply to Office Action of June 27, 2003

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applicants' invention. The rejection of claim 9 as unpatentable over Takahashi, Teng, and Shimazu should be withdrawn.

Conclusion

It is respectfully submitted that the claims are in condition for immediate allowance and a notice to this effect is earnestly solicited. The Examiner is invited to phone applicants' attorney if it is believed that a telephonic or personal interview would expedite prosecution of the application.

Respectfully submitted,

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Enclosure Newly Executed Declaration

Dated: September 29, 2003

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The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

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PROCESS FOR MAKING A TWO LAYER THERMAL NEGATIVE PLATE

ABSTRACT OF THE DISCLOSURE

A process for forming a negative image useful as a printing plate is disclosed. A photosensitive assembly that comprises (a) a hydrophilic support, (b) a first layer that comprises a polymer that is soluble or dispersible in an aqueous alkaline solution, (c) a second layer that comprises at least one *o*-quinonediazide compound, and (d) an infrared absorbing compound is: (1) flood exposed with ultraviolet radiation; (2) imagewise exposed with infrared laser radiation; and (3) developed to produce the negative image.